

August 20, 2003

1. Amendment to Specification and Claims

In this response, Applicants have amended the above-noted portions of the specification and enumerated claims to correct minor typographical and grammatical error present therein, and to make the specification conform to the originally filed figures. The Applicants submit that no new matter has been added by such amendments.

2. Rejection of Claims 1-24

The Examiner has rejected Claims 1-24 under 35 U.S.C. §103(a) as being unpatentable over Chen (U.S. Patent Application Publication U.S. 2003/0009607) in view of Kuo (U.S. Patent Application Publication U.S. 2002/0010828). The Applicants traverse the reason for rejection for the reasons set forth in greater detail below.

A. Claims 1-8

Claim 1 is directed to an exemplary series of steps that define the operation of a compact flash controller and includes, among others, the following step:

“...translating the specified command sequence into a set of data transfer operative elements that provide for the transfer of data to a corresponding memory array pair...”

Such step is not taught or suggested in either Chen or Kuo, individually or in combination. Consequently, the combination of Chen and Kuo does not render the invention as defined in Claim 1 obvious. As understood, Chen is directed to a hardware independent flash controller capable of direct communication between a host computer and a flash memory (e.g. ROM). More specifically, Chan disclosed a system using a flash controller to re-interpret or redefine IDE bus activities, and issuing read/write flash ROM cycles to directly program the flash ROM (see, for example, FIG. 1 and paragraphs 0017 and 0020). On page 3, paragraph 5 of the instant Office Action, the

August 20, 2003

Examiner admits that "...Chen does not teach a flash memory comprising [of] a number of flash memory arrays or the partitioning of the flash memory arrays..." as defined in Claim 1. Thus, this limitation is not taught or suggested in Chen. Moreover, the aforementioned limitations is also not taught or suggested in Chen. As presented, for example, in paragraphs 0018 and 0020-0021, read and write operations are performed to a single location within the ROM.

In contradistinction, the invention as defined in Claim 1 provides for the memory being partitioned into a plurality of memory array pairs, where each array pair is configured to hold a respective portion (e.g. even or odd bits) of data. See, for example, page 7, lines 6-9 and page 8, lines 8-11. In this manner, a first portion of the data is transferred to/from a first one of the memory array pairs and a second portion of the data is transferred to/from a second one of the memory array pairs. Such functionality is not taught or suggested in the single location transfer description provided in Chen. Accordingly, the aforementioned limitation is not taught or suggested in Chen.

Combining the teachings of Kuo to the teachings of Chen still does not render the invention as defined in Claim 1 obvious as Kuo also does not teach or suggest "...operative elements that provide for the transfer of data to a corresponding memory array pair..." as Kuo is directed to partitioning a memory into various upper and lower bank sizes based on the address of the information to be transferred and a bank selector decoder (see, for example, FIG. 2 and paragraphs 0030-0031, 0033 and 0035). Based on the plurality of inputs to a Bank Decoder, the particular bank (e.g. either upper or lower) is accessed to provide for the transfer of data (see, for example, paragraph 0031). Kuo is silent on transferring data to a corresponding memory array pair, as defined in Claim 1. In fact, Kuo teaches away from memory array pair transferring as the data or other information being transferred in Kuo is sent to a particular (e.g. single) memory location. See, for example, paragraph 0035, "...bank

August 20, 2003

elector output 11 which outputs a bank selector signal BSEL to point any particular memory address to either the upper memory bank or the lower memory bank based upon the partition boundary..." Consequently, Kuo does not teach or suggest the invention as defined in Claim 1.

Thus, as the combination of Chen and Kuo does not render the invention as defined in Claim 1 obvious, the Applicants submit that the rejection of Claim 1 over the same is improper and should be withdrawn. Accordingly, reconsideration of the rejection of Claim 1 is respectfully requested.

Claims 2-8 directly and indirectly depend upon and include the limitations of Claim 1 and are allowable at least for the reasons set forth above with respect to Claim 1. Moreover, these claims define novel subject matter as compared to the cited art. More specifically, Claim 4 includes the limitation of:

"...the set of data transfer operative elements that has been translated from the specified command sequence directs the compact flash controller to write data and address content received from the host device to at least one sector of a flash memory array pair..."

and Claim 5 includes the limitation of:

"...the set of data transfer operative elements that has been translated from the specified command sequence directs the compact flash controller to read data and address content from at least one sector of a flash memory array pair..."

which, as discussed in greater detail above, are not taught or suggested in Chen or Kuo individually or in combination. Consequently, the combination of Chen and Kuo does not render the invention as defined in at least the above noted claims obvious. Accordingly, reconsideration of the rejection of Claims 1-8 is respectfully requested.

August 20, 2003

B. Claims 9-16

Claim 9 defines a system for controlling the transfer of data between a flash memory and a host. Claim 9, like Claim 1 above, includes a limitation directed to:

“...circuitry of the compact flash controller configured to translate the specified command sequence into a set of data transfer operative elements that provide for the transfer of data to a corresponding memory array pair...”

As such, Claim 9 is submitted to be allowable at least for the reasons set forth above with respect to Claim 1. Accordingly, reconsideration of the rejection of Claim 9 is respectfully requested.

Claims 10-16 directly or indirectly depend upon and include the limitations of Claim 9 and are thus allowable at least for the reasons set forth above with respect to Claim 9. Accordingly, reconsideration of the rejection of Claims 9-16 is respectfully requested.

C. Claims 17-24

Claim 17 defines a computer program product having computer code embodied therein for controlling the transfer of data between flash memory and a host device. Claim 17, like Claim 1 above, include a limitation directed to:

“...translate the specified command sequence into a set of data transfer operative elements that provide for the transfer of data to a corresponding memory array pair...”

As such, Claim 17 is submitted to be allowable at least for the reasons set forth above with respect to Claim 1. Accordingly, reconsideration of the rejection of Claim 17 is respectfully requested.

August 20, 2003

Claims 18-24 directly or indirectly depend upon and include the limitations of Claim 17 and are allowable at least for the reasons set forth above with respect to Claim 17. Moreover, these claims define novel subject matter as compared to the cited art. More specifically, Claim 20 includes a limitation to:

“...the computer readable program code devices of the compact flash controller writes content received from the host device to at least one sector of a compact flash memory array pair...”

and Claim 21 includes a limitation to:

“...the computer readable program code devices of the compact flash controller reads data and address content from at least one sector of a compact flash memory array pair that is transferred back to the host device...”

which, as discussed above, is not taught of suggested by Chen or Kuo, individually or in combination. Consequently, the combination of Chen and Kuo does not render the invention as defined in at least the above-noted claims obvious. Accordingly, reconsideration of the rejection of Claims 17-24 is respectfully requested.

CONCLUSION

In view of the amendments and arguments set forth above, Applicants respectfully submit that Claims 1-24 distinguish over the art cited by the Examiner and are allowable. Applicants, having answered each and every ground of rejection set forth by the Examiner, now submit that the case is in proper condition for allowance and such action is earnestly solicited.

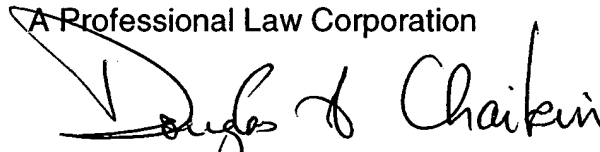
If any questions should arise with respect to the above remarks, or if it would in any way expedite the prosecution of this case, Applicant's attorney would appreciate a telephone call at (408) 965-4001.

August 20, 2003

Respectfully submitted,

PENINSULA IP GROUP

A Professional Law Corporation

A handwritten signature in black ink, appearing to read "Douglas A. Chaikin", is written over the printed name and address.

Douglas A. Chaikin
2290 North First Street, Suite 101
San Jose, CA 95131
Reg. No. 29,140
Tel: (408) 965-4001